

## Replacement Sheet

### Definition

```
def GroupTernary(op,size,rd,rc,rb,ra) as
    d ← RegRead(rd, 128)
    c ← RegRead(rc, 128)
    b ← RegRead(rb, 128)
    case op of
        G.MUX:
            a ← (c and d) or (b and not d)
    endcase
    RegWrite(ra, 128, a)
enddef
```

### Exceptions

none

**Fig. 31E**

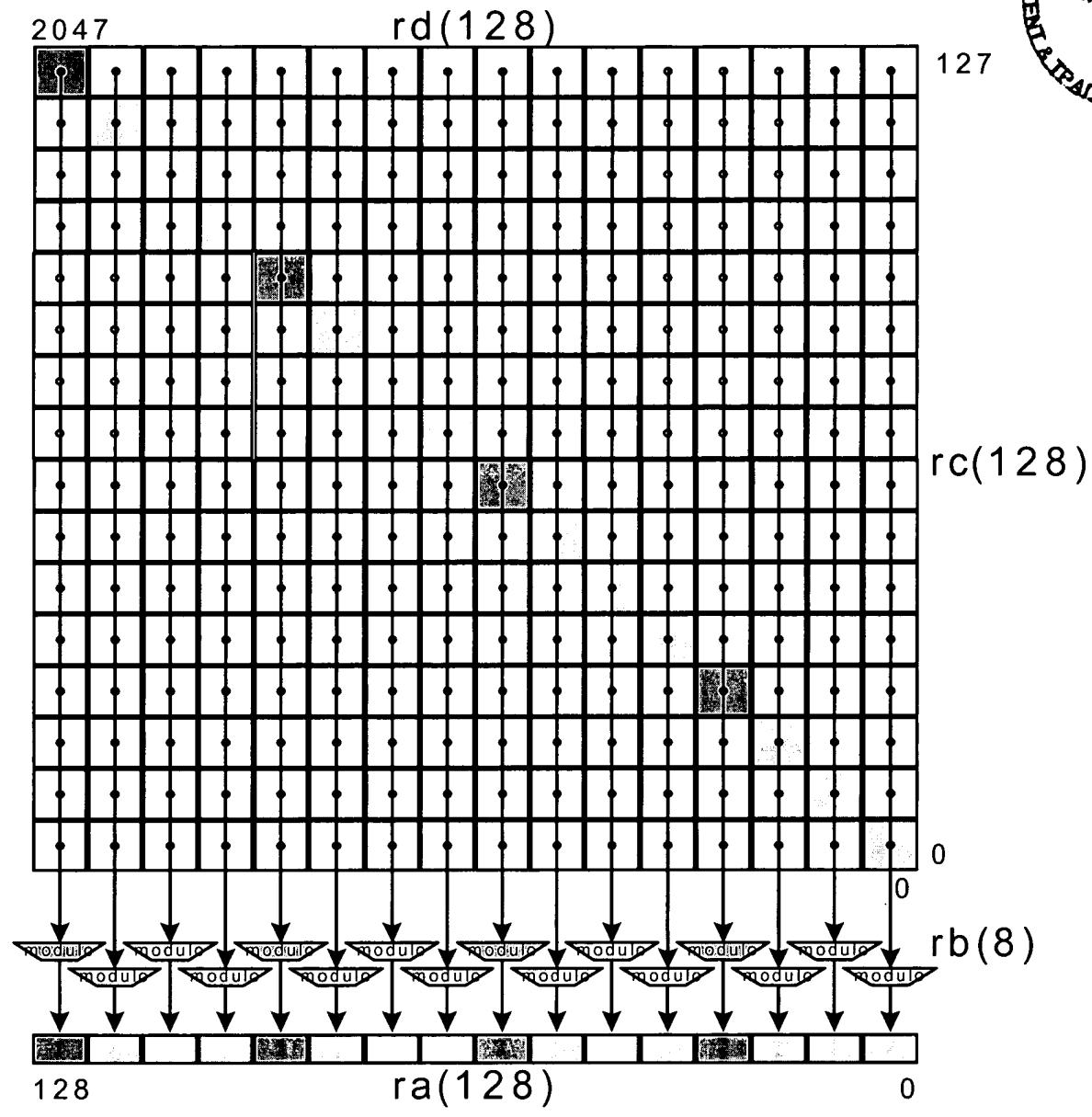
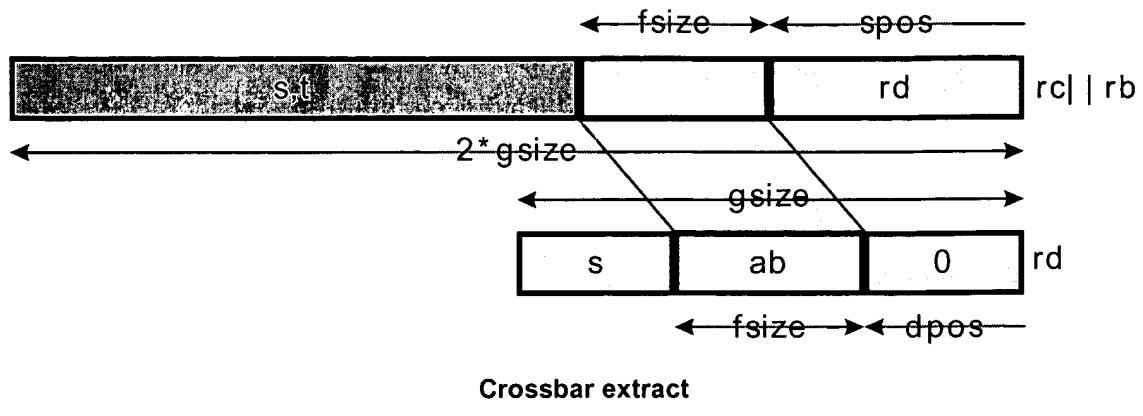
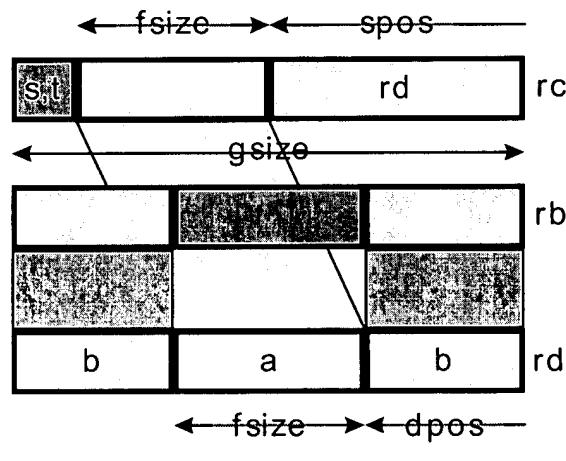


Fig. 42D

## Replacement Sheet



**Fig. 44C**



**Fig. 44D**

Replacement Sheet

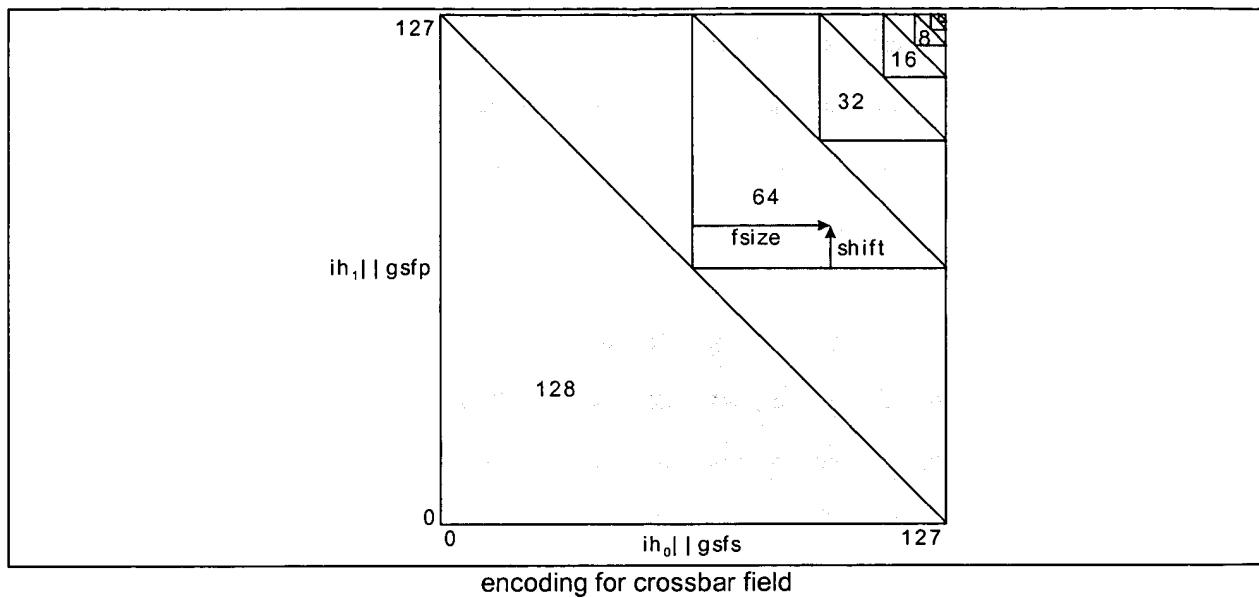


Fig. 45D

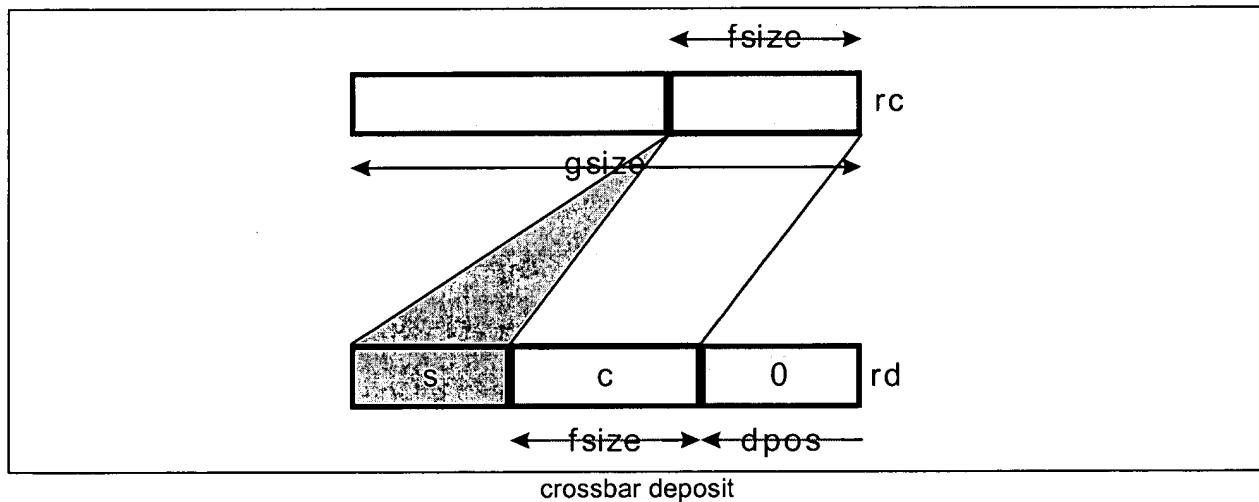
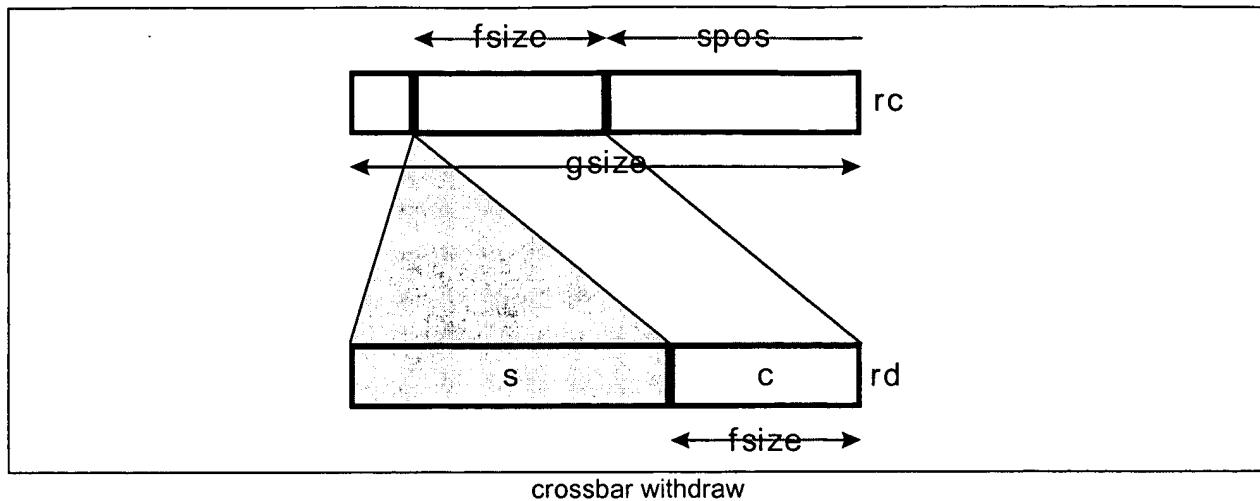


Fig. 45E

## Replacement Sheet



**Fig. 45F**

**Operation codes**

X.DEPOSIT.M.2	Crossbar deposit merge pecks
X.DEPOSIT.M.4	Crossbar deposit merge nibbles
X.DEPOSIT.M.8	Crossbar deposit merge bytes
X.DEPOSIT.M.16	Crossbar deposit merge doublets
X.DEPOSIT.M.32	Crossbar deposit merge quadlets
X.DEPOSIT.M.64	Crossbar deposit merge octlets
X.DEPOSIT.M.128	Crossbar deposit merge hexlet

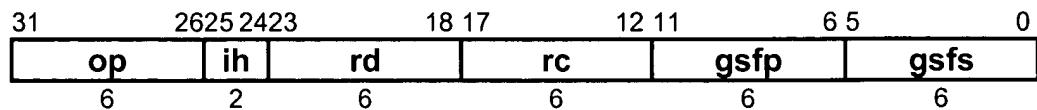
**Fig 45G**

## Replacement Sheet

### Format

X.op.gsize      rd@rc, isize, ishift

rd=xopgsize(rd,rc, isize, ishift)



assert isize+ishift ≤ gsize

assert isize ≥ 1

ih<sub>0</sub> || gsfs ← 128-gsize+isize-1

ih<sub>1</sub> || gsfp ← 128-gsize+ishift

Fig 45H

## Replacement Sheet

### Definition

```
def CrossbarFieldInplace(op,rd,rc,gsfp,gsfs) as
    c ← RegRead(rc, 128)
    d ← RegRead(rd, 128)
    case ((op1 || gsfp) and (opo || gsfs)) of
        0..63:
            gsize ← 128
        64..95:
            gsize ← 64
        96..111:
            gsize ← 32
        112..119:
            gsize ← 16
        120..123:
            gsize ← 8
        124..125:
            gsize ← 4
        126:
            gsize ← 2
        127:
            raise ReservedInstruction
    endcase
    ishift ← (op1 || gsfp) and (gsize-1)
    isize ← ((opo || gsfs) and (gsize-1))+1
    if (ishift+isize>gsize)
        raise ReservedInstruction
    endif
    for i ← 0 to 128-gsize by gsize
        ai+gsize-1..i ← di+gsize-1..i+isize+ishift || ci+isize-1..i || di+ishift-1..i
    endfor
    RegWrite(rd, 128, a)
enddef
```

### Exceptions

Reserved instruction

Fig 45I

Replacement Sheet

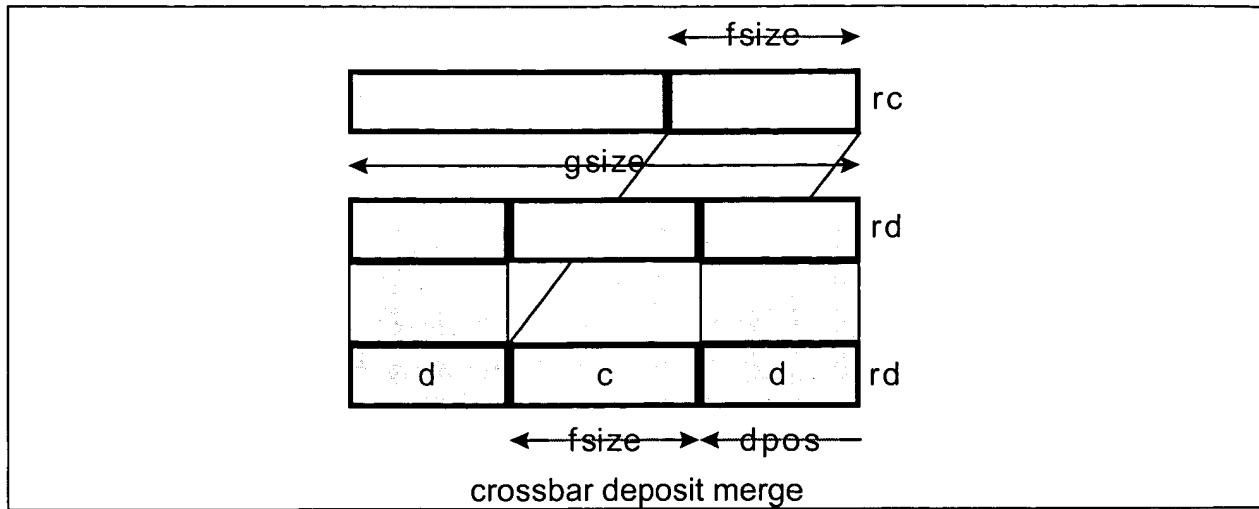
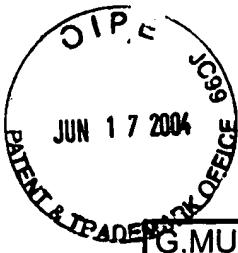


Fig 45J



## Operation codes

G.MUX

Group multiplex

### Redundancies

G.MUX ra=rd,rc,rc	$\Leftrightarrow$	G.COPY ra=rc
G.MUX ra=ra,rc,rb	$\Leftrightarrow$	G.BOOLEAN ra@rc,rb,0x11001010
G.MUX ra=rd,ra,rb	$\Leftrightarrow$	G.BOOLEAN ra@rd,rb,0x11100010
G.MUX ra=rd,rc,ra	$\Leftrightarrow$	G.BOOLEAN ra@rd,rc,0x11011000
G.MUX ra=rd,rd,rb	$\Leftrightarrow$	G.OR ra=rd,rb
G.MUX ra=rd,rc,rd	$\Leftrightarrow$	G.AND ra=rd,rc

### Format

G.MUX      ra=rd,rc,rb

ra=gmux(rd,rc,rb)

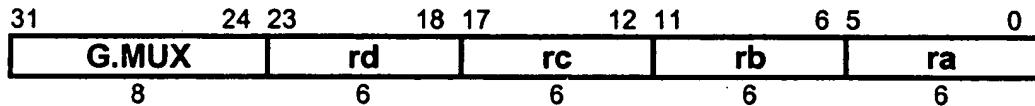


Fig. 31D